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## OFFSHORE PRODUCTION: BOON OR BANE FOR THE JAPANESE ECONOMY?

Summary

What effect does expanded foreign direct investment in manufacturing have on employment opportunities at home and on the investing country's trade balance? That question produced a heated but ultimately inconclusive debate in the United States in the 1970s. Now economic policymakers and corporate planners in Japan are grappling with the same issue. The recent proliferation of overseas production facilities has stirred fears that Japanese manufacturers will soon be exporting jobs in volume instead of cars, steel and consumer electronics products. These worries are premature, in part because Japan's foreign manufacturing presence is too limited to have a near-term impact on domestic output. But a reduction in manufacturing employment over the long run is probably inevitable, although the cutback by the end of the 1990s might not be as deep as the 600,000 to 800,000 job loss government agencies initially predicted. At the same time, stepped-up offshore production is unlikely to narrow the gap between exports and imports by the big margin Tokyo has projected.

### Japanese Foreign Direct Investment Takes Off

Two decades after surging U.S. investment in foreign production facilities made the phrase multinational corporation part of the business vocabulary, Japanese manufacturers are finally starting to supply a measurable share of the world market from overseas plants. Japan's big trading companies internationalized their operations in the 1960s, setting up offices around the globe to facilitate the distribution of Japanese-made products and handle the shipment of agricultural and industrial inputs back to Japan. Japanese exporters opened

sales subsidiaries in the United States and other promising markets during this period, but few companies took the next step of investing in offshore factories. The reason was simple: there was little incentive to produce abroad. Wage rates were relatively low, the yen was undervalued and exports, while increasing, had not generated a backlash overseas. Moreover, the government controlled the outflow of capital until 1969, and the business community lacked the managerial resources to support foreign investment.

This calculus changed in the 1970s. The international competitive advantage Japanese exporters had gained from low labor costs began to erode as tightening labor markets accelerated wage increases and the 1971 revaluation of the yen magnified these increases in dollar terms. The two oil shocks and the run-up of other commodity prices during the decade also jacked up production costs in Japan by bigger margins than in many competitor nations. Already pinched, the steep appreciation of the yen in 1978 delivered another blow to exporters. At the same time, trade barriers began to spring up in key Japanese export markets, particularly the United States, and a number of developing countries adopted policies to replace imports with locally made products.

Despite the push and pull of these factors, overseas investment did not increase much beyond a trickle during the 1970s. In most industries this response to the hike in wages and material and energy prices ranked a distant third to cost-cutting at home and shifting domestic output to products with higher value-added. Textiles were a major exception, with producers moving some production to neighboring Asian countries or Latin America, but few other suppliers of labor-intensive products followed them. Electric machinery manufacturers also numbered among the mavericks by transferring labor-intensive production processes to developing countries, although this move was generally limited to final assembly of low-end products. In addition, a small cross section of companies in the metals, chemicals and wood and paper products industries made investments in Latin America, Asia and North America to tap lower-cost raw material and/or energy supplies. Most of the remaining names on the short list of foreign investors during the 1970s were companies that set up operations in the United States to get behind actual or potential trade barriers.

The trickle of foreign investment finally turned into a steady stream at the start of the 1980s. By then exporters had accepted the fact that they could no longer afford to consider offshore production a last-ditch response to the new conditions of international competition. Limits to the returns from cost-cutting and product upgrading over the short to medium run required a change in strategy; so did the spreading backlash in the United States, Europe and elsewhere to the seemingly nonstop growth of made-in-Japan shipments. But for most exporters, production abroad remained a second-best solution until the yen began to soar in value in the fall of 1985. At that point top management generally acknowledged that their options had been reduced to two -- where to invest overseas and when.

This change is clearly marked in Japan's foreign investment data. The amount of money going into overseas production facilities was running between

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$2.1 billion and $2.6 billion a year during the FY 1981-FY 1985 period. In the fiscal year starting in April 1986, though, the figure swelled to $3.8 billion (see Table 1). But even with this jump and a much bigger gain -- perhaps twice as large -- in the current fiscal year, Japanese manufacturers still have a long way to go before their offshore operations begin to rival those of American companies.

Table 1: Japan's Foreign Direct Investment in Manufacturing*

(in millions of dollars)

| | Cumulative Total Investment | Cumulative Manufacturing Investment | Manufacturing Addition | | |
|---|---|---|---|---|---|
| | | | Total | North America | Asia |
| FY 1986 | $105,970 | $28,206 | $3,806 | $2,198 | $804 |
| FY 1985 | 83,649 | 24,400 | 2,352 | 1,224 | 460 |
| FY 1984 | 71,431 | 22,048 | 2,505 | 1,242 | 517 |
| FY 1983 | 61,276 | 19,542 | 2,588 | 991 | 740 |
| FY 1982 | 53,131 | 16,952 | 2,099 | 842 | 542 |
| FY 1981 | 45,403 | 14,853 | 2,280 | 980 | 687 |
| FY 1980 | 36,497 | 12,573 | 1,706 | 398 | 724 |
| FY 1979 | 31,804 | 10,867 | 1,693 ] | | |
| FY 1978 | 26,809 | 9,174 | 2,035 ] | 773 | 1,295 |
| FY 1977 | 22,211 | 7,139 | 1,052 | 202 | 331 |
| FY 1976 | 19,405 | 6,087 | 921 | 223 | 183 |
| FY 1975 | 15,943 | 5,166 | 1,027 | 140 | 470 |
| FY 1974 | 12,666 | 4,139 | 898 | n.a. | n.a. |
| FY 1973 | 10,270 | 3,241 | 1,496 | n.a. | n.a. |
| FY 1972 | 6,773 | 1,745 | 525 | n.a. | n.a. |
| FY 1966-FY 1971 | 4,436 | 883 | --- | --- | --- |
| FY 1951-FY 1965 | 950 | 337 | --- | --- | --- |

*Figures cover investments reported to and approved by the Ministry of Finance.

Source: Ministry of Finance

For starters, Department of Commerce data indicate that U.S. multinationals had invested $107.2 billion in overseas manufacturing facilities by yearend 1986, while the Ministry of Finance places the March 31, 1987 value of Japanese foreign investment in manufacturing at $28.2 billion. But this amount as well as the $106 billion total figure for Japan are thought to overstate the size of its international investment presence since they are based on investment plans reported to the ministry, not actual flows. A more realistic set of numbers, derived from the balance of payments data, is $72 billion overall at the end of 1986 and $19 billion or so in manufacturing -- which is roughly what American manufacturers had spent on foreign factories as of the mid-1960s.

A comparison of offshore-to-domestic production or sales ratios underscores the fact that Japanese companies have a lot of catching up to do before

they can be considered true multinational producers. Sales by U.S. foreign manufacturing affiliates have equaled 20 percent-plus of domestic sales since the start of the 1980s, including 23.8 percent in 1985. The comparable figure for Japan is a fraction of this number -- something on the order of 5 percent. Survey data collected by the Ministry of International Trade and Industry for FY 1985 put the ratio at only 3 percent (see Table 2), down from 4.3 percent in FY 1984 and 3.9 percent in the April 1983-March 1984 period. But this drop was largely a statistical quirk, the result of translating sales reported by overseas production subsidiaries in dollars and other foreign currencies back to yen at Y178.60=$1.00, March 1986's closing rate, in place of Y250.65, the year-earlier figure. Using the March 1985 conversion rate lifts the ratio to 4.2 percent.

Employment figures also highlight the differences between Japan's foreign production subsidiaries and U.S. affiliates. Nearly 4.4 million people were employed by the overseas manufacturing units of American companies at the end of 1985. Just over two-thirds of these jobs were in other industrial countries, including 2.1 million in Europe, although 80 percent-plus of all U.S. foreign manufacturing investment has gone into these markets, primarily for the production of capital-intensive products like chemicals, industrial and commercial machinery and motor vehicles.

In contrast, the foreign manufacturing affiliates of Japanese businesses had about 800,000 employees in March 1986. Three-fourths of this workforce was in the third world, particularly Asia, where 450,000 people alone were employed in such labor-intensive industries as electric machinery (159,000) and textiles (98,000). But this concentration reflects the early pattern of Japanese investment, not recent trends, which have nearly evened the split between manufacturing holdings in the United States and other industrial nations and those in developing countries (see Appendix Tables 1-3).

Job Drain?

Will Japanese manufacturers start exporting jobs now that offshore production has joined cost-cutting and diversification on the list of corporate strategies for dealing with the appreciating yen? Not necessarily, if recent history is any guide. The manufacturing sector generated an extra 730,000 jobs during the 1983-85 export boom period, raising total employment to a record 14.5 million-plus. Most of these gains, not surprisingly, were in the huge electronics, nonelectric machinery and transportation equipment businesses, centered on electronic components, computer equipment, applied electronics products, metalworking and other specialized industrial machinery, service industry machinery, and motor vehicles and parts (see Table 3 and Appendix Table 4). But with one or two exceptions, these same industries were at the forefront of the offshore production movement, expanding abroad more often than not because of protectionist pressures.

Conversely, it is hard to find any link between overseas operations and the loss of jobs in the textiles, chemicals, nonmetallic mineral products and metals industries during the 1983-85 period since foreign investment activity in these fields was also on the downswing. The same in fact holds for the elimination of 320,000 manufacturing positions over the course of 1986 and 1987 -- the take-off years for corporate investment abroad, although at this level of aggregation it is admittedly impossible to separate the employment effects

Table 2: Indicators of the Performance of Foreign Affiliates of Japanese Companies, FY 1985*

(in billions of yen unless otherwise indicated**)

| | Number of Affiliates | Total Capital | Total Sales | Ratio of Foreign to Domestic Sales | Production | Employment | Net Profits | Profit Margin |
|---|---|---|---|---|---|---|---|---|
| Manufacturing | 2,242 | Y2,429 | Y9,949 | 3.0% | Y3,914 | 800,836 | Y-35 | -0.4% |
| Food Products | 116 | 82 | 326 | 0.9 | 120 | 21,081 | 3 | 0.8 |
| Textiles | 172 | 157 | 620 | 2.7 | 397 | 121,690 | 16 | 2.6 |
| Wood and Paper Products | 48 | 122 | 183 | 1.2 | 131 | 11,788 | 6 | 3.4 |
| Chemicals | 318 | 334 | 613 | 2.0 | 207 | 38,999 | 14 | 2.2 |
| Steel | 116 | 217 | 896 | 5.3 | 256 | 73,575 | -98 | -10.9 |
| Nonferrous Metals | 60 | 118 | 246 | 2.7 | 141 | 22,990 | 6 | 2.5 |
| Nonelectric Machinery | 197 | 87 | 514 | 3.4 | 94 | 40,431 | 1 | 0.2 |
| Electric Machinery | 534 | 469 | 3,704 | 7.4 | 1,382 | 252,861 | 49 | 1.3 |
| Transport Equipment | 272 | 648 | 2,042 | 5.6 | 779 | 133,958 | -51 | -2.5 |
| Precision Instruments | 82 | 25 | 234 | 3.4 | 77 | 17,546 | 6 | 2.6 |
| Petroleum Products | 7 | 8 | 2 | 0.0 | 1 | 185 | 0 | -5.9 |
| Other | 320 | 161 | 568 | 0.8 | 331 | 65,732 | 13 | 2.3 |
| Agriculture, Forestry and Fisheries | 82 | 27 | 397 | -- | -- | 15,928 | -2 | -0.4 |
| Mining | 105 | 462 | 970 | -- | -- | 60,115 | 40 | 4.2 |
| Construction | 190 | 64 | 859 | -- | -- | 26,403 | 4 | 0.5 |
| Trade and Sales | 1,984 | 1,030 | 38,151 | -- | -- | 125,248 | 168 | 0.4 |
| Services | 281 | 104 | 200 | -- | -- | 17,500 | 2 | 0.8 |
| Other | 459 | 456 | 427 | -- | -- | 11,038 | 6 | 1.5 |
| Total | 5,343 | 4,572 | 50,953 | -- | -- | 1,057,068 | 184 | 0.4 |

*These results are based on the responses of 1,413 of the 3,385 Japanese corporate investors to which questionnaires were sent. Given the low response rate, the findings must be interpreted with care. Moreover, the appreciation of the yen deflates the figures for sales, production and profits since these numbers were originally stated in dollars or other foreign currencies.

**The yen figures were derived using an exchange rate of Y178.60=$1.00, the March 31, 1986 closing rate.

Source: Ministry of International Trade and Industry, January 1988

of expanded offshore production from those caused by reduced export shipments, increased import competition and/or shifts in demand at home. Survey evidence, however, supports the argument that there was little or no correlation. For example, more than four-fifths of the 190 manufacturers responding to a July 1987 Long-Term Credit Bank of Japan survey said that their foreign plants had had no impact on the domestic employment situation -- the same proportion indicating that overseas investment has been independent of capital spending in Japan.

But is past experience really a reliable indicator of what might happen to manufacturing employment in Japan given the big gains projected for foreign investment? Government agencies are certainly not optimistic. Assuming that the outflow of funds would continue to expand at the FY 1980-FY 1986 average annual rate of 14 percent through the end of the 1990s, a MITI advisory group recently estimated that increased overseas production would cost Japan 600,000 manufacturing jobs by 1995 and perhaps as many as 800,000 by the year 2000. A 1986 Economic Planning Agency study placed the potential job loss by the end of this century at 600,000, while the 1987 labor white paper predicted the elimination of 450,000 manufacturing positions over the next 10 years.

Even with the continued growth of employment opportunities in the nonmanufacturing sector, these numbers could spell trouble for the Japanese economy. But there are at least three factors that will minimize the fallout from offshore manufacturing operations over the medium run and might contain the long-term job loss. The primary one is the type of work performed by foreign affiliates in the electronics, nonelectric machinery and automotive industries, which now account for two-fifths of Japan's foreign investment. Whether in the United States or elsewhere, these subsidiaries do final assembly, putting together components or subassemblies mainly imported from Japan.

This sourcing arrangement is unlikely to change significantly over the near turn despite the increasing cost of using Japanese-made imports. Most Japanese affiliates are simply too new to have gone through the time-consuming process of identifying and qualifying host-country suppliers for more than a fraction of their parts requirements. At the same time, local management is generally unwilling to consider the alternative -- in-house production of components -- until the company has gained experience in the assembly field.

The small but rising number of Japanese manufacturers opting to expand their offshore production operations through takeovers will aslo protect jobs in Japan since acquisitions are normally a means of diversifying into new product areas or, less frequently, adding capacity in existing product lines, not a way of replacing output at home. But there are costs associated with this expansion strategy because the money used for foreign acquisitions could have been invested in Japan. The same trade-off applies to a significant number of greenfield foreign investments. In these cases, a manufacturer opts to build a factory offshore rather than in Japan to meet increased demand for a product; existing Japanese jobs are not jeopardized, but employment opportunities are lost.

Help for the Trade Balance?

Although worried that the jump in foreign manufacturing investment will drain a large number of jobs from Japan, government policymakers find a silver

Table 3A: Distribution of Employment in the Manufacturing Sector

| | 1977 | 1981 | 1985 |
|---|---|---|---|
| Food Products | 10.5% | 9.3% | 9.3% |
| Tobacco Products, Beverages and Feed | * | 1.3 | 1.3 |
| Textile Mill Products | 7.4 | 6.5 | 5.6 |
| Apparel and Made-up Textile Products | 4.8 | 4.9 | 5.0 |
| Lumber and Wood Products | 3.8 | 3.2 | 2.5 |
| Furniture and Fixtures | 2.5 | 2.4 | 2.0 |
| Pulp, Paper and Paper Products | 2.8 | 2.7 | 2.5 |
| Printing and Publishing | 4.4 | 4.7 | 4.7 |
| Chemicals and Related Products | 4.2 | 3.9 | 3.6 |
| Petroleum Refining | 0.4 | 0.4 | 0.3 |
| Plastic Products | ** | 3.1 | 3.5 |
| Rubber Products | 1.5 | 1.5 | 1.5 |
| Leather and Leather Products | 0.8 | 0.8 | 0.7 |
| Nonmetallic Mineral Products | 4.9 | 4.8 | 4.3 |
| Steel | 4.5 | 4.0 | 3.6 |
| Nonferrous Metals | 1.9 | 1.8 | 1.5 |
| Fabricated Metal Products | 7.1 | 7.2 | 7.2 |
| Nonelectric Machinery | 9.8 | 10.0 | 10.3 |
| Electric Machinery | 11.9 | 13.9 | 16.8 |
| Transportation Equipment | 8.9 | 8.7 | 8.8 |
| Precision Instruments | 2.4 | 2.6 | 2.4 |
| Other | 5.4 | 2.5 | 2.4 |
| Total | 100.0 | 100.0 | 100.0 |
| Total Employment (in thousands) | 10,246 | 10,568 | 10,890 |

*Included in food products.
**Included in other.

Source: Ministry of International Trade and Industry

Table 3B: Distribution of Shipments in the Manufacturing Sector

| | 1977 | 1981 | 1985 |
|---|---|---|---|
| Food Products | 11.8% | 7.9% | 7.7% |
| Tobacco Products, Beverages and Feed | * | 2.8 | 3.2 |
| Textile Mill Products | 4.5 | 3.6 | 3.0 |
| Apparel and Made-up Textile Products | 1.6 | 1.4 | 1.4 |
| Lumber and Wood Products | 2.6 | 2.0 | 1.5 |
| Furniture and Fixtures | 1.4 | 1.3 | 1.1 |
| Pulp, Paper and Paper Products | 3.2 | 3.0 | 2.8 |
| Printing and Publishing | 3.1 | 3.3 | 3.4 |
| Chemicals and Related Products | 8.1 | 8.0 | 7.7 |
| Petroleum Refining | 5.8 | 7.1 | 4.9 |
| Plastic Products | ** | 2.6 | 3.0 |
| Rubber Products | 1.1 | 1.1 | 1.1 |
| Leather and Leather Products | 0.5 | 0.5 | 0.4 |
| Nonmetallic Mineral Products | 3.7 | 3.8 | 3.3 |
| Steel | 8.6 | 7.7 | 6.7 |
| Nonferrous Metals | 3.4 | 3.2 | 2.4 |
| Fabricated Metal Products | 4.9 | 4.9 | 4.9 |
| Nonelectric Machinery | 8.1 | 8.6 | 9.1 |
| Electric Machinery | 9.7 | 11.4 | 15.4 |
| Transportation Equipment | 12.3 | 12.5 | 13.6 |
| Precision Instruments | 1.5 | 1.7 | 1.7 |
| Other | 4.1 | 1.5 | 1.5 |
| Total | 100.0 | 100.0 | 100.0 |
| Total Shipments (in billions) | Y154,943 | Y224,712 | Y265,321 |

*Included in food products.
**Included in other.

Source: Ministry of International Trade and Industry

lining in the growth of offshore production -- a reduction in Japan's huge trade surplus as exports are replaced by products made abroad and imports are bolstered by purchases from overseas plants. In fact, the Industrial Structure Council, which advises MITI, has projected that expanded foreign production will cut the record 1986 trade surplus of $82.7 billion by $18.9 billion in 1990 and by $46.8 billion in 1995.

The trade surplus is sure to come down; attributing such an enormous change to overseas output is another matter. On the export side, shipments of finished products will decline, but this drop will be offset at least in part and perhaps largely by an expanded outflow of components and subassemblies to foreign assembly subsidiaries. In addition, the proliferation of offshore plants will undoubtedly boost the demand for made-in-Japan production equipment. On the other side of the ledger, the long and increasing list of Japanese manufacturers that have announced plans to bring in products from their affiliates may have caused the ISC to overestimate the future growth of imports. The plans are there, but the volumes envisioned are too small individually and collectively to lift imports by a large percentage.

Economic policy planners have also overlooked the possibility that some of the drop in the trade surplus will be countered by an increase in direct investment income, keeping the current account surplus at a politically dangerous level. This oversight is understandable. As relative newcomers, most overseas production subsidiaries have barely turned the corner on profitability or are still operating in the red. Even when this situation changes, the affiliates can be expected to reinvest nearly all their earnings based on what Japanese companies operating in the United States have done. But at some point down the road, profits should exceed investment requirements by a big enough margin to flow back to Japan.

For further information, contact Susan MacKnight.

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The views expressed in this report are those of the author and do not necessarily reflect those of the Japan Economic Institute.

APPENDIX

Table 1: Japan's Foreign Direct Investment by Country, FY 1982-FY 1986

(in millions of dollars)

| | FY 1982 | FY 1983 | FY 1984 | FY 1985 | FY 1986 | Cumulative March 31, 1987 |
|---|---|---|---|---|---|---|
| United States | $2,738 | $2,565 | $3,360 | $5,395 | $10,165 | $35,455 |
| Canada | 167 | 136 | 184 | 100 | 276 | 1,951 |
| North America | 2,905 | 2,701 | 3,544 | 5,495 | 10,441 | 37,406 |
| Panama | 722 | 1,223 | 1,671 | 1,533 | 2,401 | 8,841 |
| Brazil | 322 | 410 | 318 | 314 | 270 | 4,857 |
| Mexico | 143 | 121 | 56 | 101 | 226 | 1,556 |
| Caymans | 6 | 1 | 1 | 132 | 930 | 1,279 |
| Bahamas | --- | 1 | 97 | 298 | 792 | 1,247 |
| Peru | 185 | --- | 6 | 10 | --- | 696 |
| Bermuda | 5 | 14 | 29 | 148 | 16 | 617 |
| Latin America | 1,503 | 1,878 | 2,290 | 2,616 | 4,737 | 20,373 |
| Indonesia | 410 | 374 | 374 | 408 | 250 | 8,673 |
| Hong Kong | 400 | 563 | 412 | 131 | 502 | 3,433 |
| Singapore | 180 | 322 | 225 | 339 | 302 | 2,571 |
| Korea | 103 | 129 | 107 | 134 | 436 | 2,118 |
| Malaysia | 83 | 140 | 142 | 79 | 158 | 1,283 |
| Taiwan | 55 | 103 | 65 | 114 | 291 | 1,051 |
| Philippines | 34 | 65 | 46 | 61 | 21 | 913 |
| Thailand | 94 | 72 | 119 | 48 | 124 | 884 |
| China | --- | --- | 114 | 100 | 226 | 513 |
| Asia | 1,384 | 1,847 | 1,628 | 1,435 | 2,327 | 21,790 |
| Kuwait | 41 | 66 | 55 | 34 | 41 | 1,309 |
| Iran | 0 | 1 | 0 | 0 | --- | 1,003 |
| Middle East | 124 | 175 | 273 | 45 | 44 | 3,016 |
| United Kingdom | 176 | 153 | 318 | 375 | 984 | 4,125 |
| Netherlands | 73 | 113 | 452 | 613 | 651 | 2,337 |
| Luxembourg | 127 | 265 | 315 | 300 | 1,092 | 2,308 |
| West Germany | 194 | 117 | 245 | 172 | 210 | 1,552 |
| France | 102 | 93 | 117 | 67 | 152 | 970 |
| Belgium | 64 | 126 | 71 | 84 | 50 | 793 |
| Switzerland | 79 | 37 | 229 | 60 | 91 | 753 |
| Spain | 19 | 52 | 140 | 91 | 86 | 601 |
| Europe | 876 | 990 | 1,937 | 1,930 | 3,469 | 14,471 |
| Liberia | 434 | 323 | 281 | 159 | 289 | 2,744 |
| Africa | 489 | 364 | 326 | 172 | 309 | 3,678 |
| Australia | 370 | 166 | 105 | 468 | 881 | 4,502 |
| Oceania | 421 | 191 | 157 | 525 | 992 | 5,234 |
| Total | 7,703 | 8,145 | 10,155 | 12,217 | 22,320 | 105,970 |

Source: Ministry of Finance

Table 2: Japan's Foreign Direct Investment by Sector, FY 1982-FY 1986

(in millions of dollars)

| | FY 1982 | FY 1983 | FY 1984 | FY 1985 | FY 1986 | Cumulative March 31, 1987 |
|---|---|---|---|---|---|---|
| Manufacturing Sector | $2,076 | $2,588 | $2,505 | $2,352 | $3,806 | $28,206 |
| Food Products | 78 | 77 | 118 | 90 | 127 | 1,218 |
| Textiles | 67 | 174 | 85 | 28 | 63 | 2,146 |
| Wood and Paper Products | 76 | 91 | 115 | 15 | 57 | 1,178 |
| Chemicals | 322 | 450 | 223 | 133 | 355 | 4,337 |
| Metals | 468 | 479 | 718 | 385 | 328 | 5,518 |
| Nonelectric Machinery | 164 | 169 | 185 | 352 | 626 | 2,597 |
| Electric Machinery | 267 | 502 | 409 | 513 | 987 | 4,734 |
| Transport Equipment | 439 | 486 | 437 | 627 | 828 | 4,201 |
| Other | 195 | 160 | 215 | 208 | 435 | 2,276 |
| Nonmanufacturing Sector | 5,478 | 5,357 | 7,429 | 9,536 | 17,949 | 74,285 |
| Agriculture/ Forestry | 40 | 18 | 26 | 12 | 15 | 795 |
| Fisheries | 22 | 17 | 24 | 42 | 52 | 494 |
| Mining | 685 | 382 | 484 | 598 | 669 | 12,424 |
| Construction | 44 | 55 | 112 | 94 | 250 | 1,047 |
| Trade/Sales | 1,899 | 1,164 | 1,482 | 1,550 | 1,861 | 14,538 |
| Banking/Finance/ Insurance | 533 | 1,167 | 2,085 | 3,805 | 7,240 | 18,099 |
| Services | 702 | 622 | 681 | 665 | 1,560 | 6,246 |
| Transportation | 924 | 1,363 | 1,651 | 1,240 | 1,925 | 7,826 |
| Real Estate | 354 | 375 | 430 | 1,207 | 3,997 | 6,531 |
| Other | 276 | 193 | 454 | 322 | 379 | 6,285 |
| Branch Offices | 149 | 200 | 221 | 329 | 566 | 2,884 |
| Real Estate Transactions* | --- | --- | --- | --- | --- | 595 |
| Total | 7,703 | 8,145 | 10,155 | 12,217 | 22,320 | 105,970 |

*Overseas real estate transactions have been excluded from Japan's foreign direct investment data since December 1, 1980 because of changes in the Foreign Exchange and Foreign Trade Control Law.

Source: Ministry of Finance

Table 3: Japan's Foreign Direct Investment by Industry and Region, March 31, 1987

(in millions of dollars)

| | North America | Latin America | Asia | Middle East | Europe | Africa | Oceania | Total |
|---|---|---|---|---|---|---|---|---|
| Manufacturing Sector | $9,905 | $4,833 | $8,321 | $1,260 | $2,458 | $223 | $1,206 | $28,206 |
| Food Products | 574 | 199 | 284 | 0 | 93 | 8 | 60 | 1,218 |
| Textiles | 265 | 419 | 1,203 | 4 | 210 | 39 | 6 | 2,146 |
| Wood and Paper Products | 651 | 197 | 200 | - | 2 | 0 | 128 | 1,178 |
| Chemicals | 963 | 559 | 1,339 | 1,124 | 227 | 19 | 105 | 4,337 |
| Metals | 1,261 | 1,687 | 1,758 | 59 | 263 | 127 | 364 | 5,518 |
| Nonelectric Machinery | 1,235 | 356 | 675 | 11 | 278 | 1 | 41 | 2,597 |
| Electric Machinery | 2,732 | 324 | 1,095 | 13 | 526 | 7 | 38 | 4,734 |
| Transport Equipment | 1,506 | 982 | 822 | 4 | 498 | 15 | 374 | 4,201 |
| Other | 718 | 110 | 946 | 45 | 363 | 7 | 88 | 2,276 |
| Nonmanufacturing Sector | 26,378 | 15,474 | 13,144 | 440 | 11,387 | 3,452 | 4,011 | 74,285 |
| Agriculture and Forestry | 250 | 179 | 247 | 2 | 1 | 7 | 109 | 795 |
| Fisheries | 136 | 103 | 108 | 1 | 2 | 90 | 53 | 494 |
| Mining | 1,258 | 1,525 | 6,438 | 191 | 890 | 579 | 1,544 | 12,424 |
| Construction | 457 | 200 | 238 | 40 | 56 | 21 | 36 | 1,047 |
| Trade and Sales | 8,467 | 1,232 | 1,270 | 19 | 2,874 | 7 | 669 | 14,538 |
| Banking, Finance and Insurance | 6,251 | 4,275 | 1,069 | 93 | 5,977 | 3 | 432 | 18,099 |
| Services | 1,592 | 681 | 2,489 | 4 | 348 | 639 | 494 | 6,246 |
| Transportation | 97 | 6,058 | 253 | 2 | 40 | 1,308 | 66 | 7,826 |
| Real Estate | 5,755 | 19 | 404 | - | 144 | - | 209 | 6,531 |
| Other | 2,115 | 1,203 | 627 | 87 | 1,056 | 798 | 399 | 6,285 |
| Branch Offices | 638 | 43 | 289 | 1,315 | 588 | 1 | 10 | 2,884 |
| Real Estate Transactions* | 485 | 23 | 37 | 2 | 38 | 2 | 7 | 595 |
| Total | 37,406 | 20,373 | 21,790 | 3,016 | 14,471 | 3,678 | 5,234 | 105,970 |

*Overseas real estate transactions have been excluded from Japan's foreign direct investment data since December 1, 1980.

Source: Ministry of Finance

Table 4: Employment, Shipments and Value Added in the Manufacturing Sector, 1977, 1981 and 1985*

| | Employment | | | Shipments | | | Value Added/Shipments | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1977 | 1981 | 1985 | 1977 | 1981 | 1985 | 1977 | 1981 | 1985 |
| Food Products | 1,077,608 | 979,645 | 1,016,731 | Y18,319,688 | Y17,772,877 | Y20,541,874 | 28.6% | 30.3% | 31.8% |
| Tobacco Products, Beverages and Feed | ** | 133,845 | 139,767 | ** | 6,359,048 | 8,608,325 | ** | 23.6 | 22.9 |
| Textile Mill Products | 761,288 | 681,655 | 609,462 | 6,913,646 | 8,018,910 | 8,086,962 | 34.1 | 36.0 | 37.2 |
| Apparel and Made-up Textile Products | 494,275 | 521,133 | 539,538 | 2,481,685 | 3,196,350 | 3,651,160 | 42.9 | 45.3 | 46.6 |
| Lumber and Wood Products | 390,528 | 333,375 | 276,444 | 4,101,059 | 4,485,082 | 4,024,996 | 30.6 | 30.9 | 34.2 |
| Furniture and Fixtures | 257,564 | 251,612 | 221,663 | 2,145,425 | 2,812,141 | 2,842,103 | 41.1 | 41.5 | 42.4 |
| Pulp, Paper and Paper Products | 291,358 | 284,322 | 275,495 | 5,013,151 | 6,826,748 | 7,388,886 | 30.3 | 28.1 | 31.0 |
| Printing and Publishing | 445,785 | 493,362 | 515,213 | 4,844,246 | 7,337,615 | 8,917,793 | 53.0 | 53.6 | 51.0 |
| Chemicals and Related Products | 428,105 | 408,072 | 395,748 | 12,522,851 | 18,072,411 | 20,552,413 | 35.6 | 33.9 | 38.7 |
| Petroleum Refining | 44,665 | 44,373 | 37,697 | 8,938,443 | 15,994,016 | 12,947,907 | 8.5 | 8.6 | 8.3 |
| Plastic Products | *** | 327,785 | 382,247 | *** | 5,883,324 | 8,052,212 | *** | 33.6 | 35.9 |
| Rubber Products | 151,995 | 155,835 | 165,315 | 1,728,188 | 2,575,782 | 3,007,703 | 40.6 | 38.1 | 39.7 |
| Leather and Leather Products | 77,390 | 83,235 | 76,509 | 780,474 | 1,017,667 | 1,030,582 | 34.8 | 35.3 | 37.1 |
| Nonmetallic Mineral Products | 507,017 | 507,081 | 465,483 | 5,717,079 | 8,633,055 | 8,772,333 | 44.9 | 42.6 | 44.9 |
| Steel | 464,306 | 422,140 | 388,357 | 13,247,979 | 17,227,731 | 17,754,272 | 23.2 | 27.8 | 29.7 |
| Nonferrous Metals | 196,204 | 189,890 | 163,392 | 5,253,916 | 7,299,488 | 6,383,626 | 23.4 | 24.4 | 24.5 |
| Fabricated Metal Products | 731,750 | 763,480 | 786,604 | 7,636,591 | 10,947,848 | 13,094,388 | 42.6 | 41.8 | 42.2 |
| Nonelectric Machinery | 1,003,617 | 1,058,385 | 1,126,614 | 12,562,741 | 19,429,253 | 24,225,201 | 41.9 | 41.2 | 41.3 |
| Engines and Turbines | 55,748 | 60,355 | 56,196 | 919,412 | 1,624,610 | 1,896,106 | 34.9 | 42.3 | 41.4 |
| Agricultural Machinery | 55,085 | 43,850 | 40,623 | 913,724 | 757,756 | 831,438 | 39.0 | 38.0 | 43.1 |
| Construction and Mining Machinery | 71,593 | 72,443 | 70,002 | 1,292,137 | 2,063,935 | 2,156,750 | 39.7 | 35.8 | 31.7 |
| Metalworking Machinery | 140,815 | 163,999 | 194,840 | 1,417,869 | 2,745,224 | 3,699,979 | 47.8 | 45.5 | 47.2 |
| Textile Machinery | 37,804 | 35,623 | 30,613 | 328,219 | 492,440 | 498,998 | 47.5 | 47.4 | 44.8 |
| Specialized Industrial Machinery | 83,866 | 92,442 | 103,849 | 912,620 | 1,392,860 | 2,188,940 | 47.5 | 46.5 | 41.6 |
| General Industrial Machinery | 252,649 | 253,439 | 236,914 | 3,295,044 | 4,953,614 | 5,038,328 | 42.7 | 40.7 | 40.5 |
| Office Machines, Sewing and Knitting Machinery, Refrigeration and Service Industry Machinery | 128,777 | 140,364 | 156,526 | 1,766,302 | 2,715,319 | 4,098,531 | 32.6 | 30.7 | 34.3 |
| Other | 177,280 | 195,870 | 237,051 | 1,717,415 | 2,683,496 | 3,816,130 | 48.2 | 48.9 | 48.8 |
| Electric Machinery | 1,221,199 | 1,468,796 | 1,825,314 | 15,021,104 | 25,693,042 | 40,842,176 | 38.8 | 37.5 | 36.4 |
| Electric Transmission and Distribution Equipment | 295,269 | 336,820 | 375,854 | 3,151,712 | 4,989,281 | 6,538,484 | 39.8 | 38.1 | 38.1 |
| Appliances | 108,740 | 113,217 | 138,224 | 1,866,721 | 2,464,133 | 3,948,270 | 37.7 | 36.5 | 37.8 |
| Electric Lighting and Wiring Equipment | 45,979 | 42,032 | 45,365 | 540,914 | 666,475 | 835,524 | 35.6 | 34.8 | 36.9 |
| Communications Equipment, Consumer Electronics | 328,701 | 360,198 | 330,990 | 4,796,444 | 7,182,613 | 7,861,898 | 32.8 | 33.5 | 32.9 |
| Computers and Peripheral Equipment | ] | 68,090 | 143,477 | ] | 1,729,027 | 4,689,370 | ] | 47.5 | 37.1 |
| Medical Equipment, Video Equipment, Other Applied Electronics Products | ] 94,535 | 83,970 | 158,863 | ] 1,373,017 | 2,196,317 | 5,152,516 | ] 49.0 | 31.6 | 33.3 |
| Electric Measuring Equipment | 41,557 | 40,428 | 48,198 | 392,025 | 554,041 | 943,492 | 51.3 | 49.2 | 45.0 |
| Semiconductors, Other Electronic Components | 265,246 | 374,099 | 524,384 | 2,445,444 | 5,059,033 | 9,757,995 | 42.2 | 40.3 | 37.3 |
| Other | 41,172 | 49,942 | 59,959 | 454,828 | 852,121 | 1,114,627 | 43.0 | 42.2 | 41.0 |
| Transportation Equipment | 908,456 | 917,863 | 961,590 | 19,034,300 | 28,051,085 | 36,179,341 | 30.0 | 26.7 | 27.0 |
| Motor Vehicles and Parts | 621,061 | 700,078 | 764,501 | 14,428,578 | 23,798,558 | 31,479,293 | 27.5 | 24.5 | 25.6 |
| Railroad Equipment | 17,978 | 19,471 | 15,775 | 217,207 | 312,991 | 294,795 | 42.4 | 41.9 | 40.0 |
| Bicycles and Parts | 20,958 | 20,072 | 18,721 | 281,861 | 383,128 | 352,220 | 36.7 | 40.2 | 40.4 |
| Ship Building and Repair | 207,940 | 139,245 | 118,019 | 3,566,899 | 2,878,970 | 2,868,476 | 37.4 | 37.7 | 34.1 |
| Aircraft and Parts | 24,588 | 22,339 | 24,777 | 291,258 | 323,596 | 689,086 | 45.9 | 51.2 | 41.9 |
| Other | 15,931 | 16,658 | 19,797 | 248,496 | 353,842 | 495,472 | 30.4 | 32.6 | 36.7 |
| Precision Instruments | 242,784 | 279,039 | 261,784 | 2,364,279 | 3,802,347 | 4,381,262 | 42.9 | 39.1 | 41.9 |
| Other | 550,158 | 262,678 | 258,982 | 6,315,913 | 3,276,125 | 4,035,036 | 37.3 | 41.1 | 41.7 |
| Total | 10,246,052 | 10,567,601 | 10,889,949 | 154,942,755 | 224,711,947 | 265,320,551 | 33.2 | 32.6 | 34.1 |

*Covers establishments with four or more workers. Employment figures are as of December 31 of the relevant year. Shipments are in millions of yen. Value added = value of production - value of industrial inputs - depreciation - value of excise and commodity taxes included in value of shipments.
**Included in food products.
***Included in other.

Source: Ministry of International Trade and Industry, Census of Manufactures: Report by Industries.